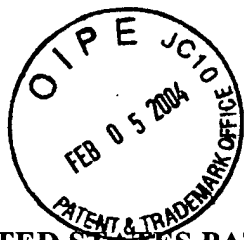


S/N 09/945507



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Leonard Forbes et al.	Examiner:	Son Dinh
Serial No.:	09/945,507	Group Art Unit:	2824
Filed:	August 30, 2001	Docket:	1303.014US1
Title:	FLASH MEMORY WITH LOW TUNNEL BARRIER INTERPOLY INSULATORS		

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

In compliance with the duty imposed by 37 C.F.R. § 1.56, and in accordance with 37 C.F.R. §§ 1.97 *et. seq.*, the enclosed materials are brought to the attention of the Examiner for consideration in connection with the above-identified patent application. Applicants respectfully request that this Information Disclosure Statement be entered and the documents listed on the attached Form 1449 be considered by the Examiner and made of record. Pursuant to the provisions of MPEP 609, Applicants request that a copy of the 1449 form, initialed as being considered by the Examiner, be returned to the Applicants with the next official communication.

Pursuant to 37 C.F.R. §1.97(b), it is believed that no fee or statement is required with the Information Disclosure Statement. However, if an Office Action on the merits has been mailed, the Commissioner is hereby authorized to charge the required fees to Deposit Account No. 19-0743 in order to have this Information Disclosure Statement considered.

INFORMATION DISCLOSURE STATEMENT

Serial No :09/945507

Filing Date: August 30, 2001

Title: FLASH MEMORY WITH LOW TUNNEL BARRIER INTERPOLY INSULATORS

Page 2

Dkt: 1303.014US1

The Examiner is invited to contact the Applicants' Representative at the below-listed telephone number if there are any questions regarding this communication.

Respectfully submitted,

LEONARD FORBES ET AL.

By their Representatives,


SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.

P.O. Box 2938

Minneapolis, MN 55402

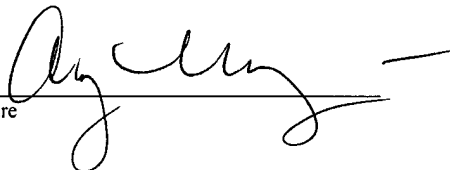
(612) 349-9587

Date 2 Feb '04

By 
Timothy B Clise
Reg. No. 40,957

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 2nd day of February, 2004.

Name Amy Moriarty

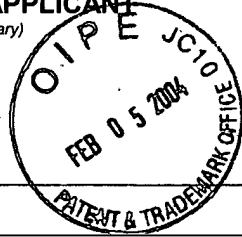
Signature 

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)



Complete if Known

Applicati n Number	09/945,507
Filing Date	August 30, 2001
First Named Inventor	Forbes, Leonard
Group Art Unit	2824
Examiner Name	Dinh, Son

Sheet 1 of 3

Attorney Docket No: 1303.014US1

US PATENT DOCUMENTS

Examiner Initial *	USP Document Number	Publication Date	Name of Patentee or Applicant of cited Document	Class	Subclass	Filing Date If Appropriate
	US-2001/0013621	08/16/2001	Nakazato, K	257	314	12/08/2000
	US-2001/0055838	12/27/2001	Walker, A J., et al.	438	129	08/13/2001
	US-2002/0028541	03/07/2002	Lee, T H., et al.	438	149	08/13/2001
	US-2003/0042527	03/06/2003	Forbes, Leonard , et al.	257	315	08/30/2001
	US-2003/0042532	03/06/2003	Forbes, Leonard	257	316	08/30/2001
	US-2003/0043622	03/06/2003	Forbes, Leondard	365	185.05	08/30/2001
	US-2003/0043630	03/06/2003	Forbes, Leonard , et al.	365	185.26	08/30/2001
	US-2003/0043632	03/06/2003	Forbes, Leonard	365	185.28	08/30/2001
	US-2003/0043633	03/06/2003	Forbes, Leonard , et al.	365	185.28	12/20/2001
	US-2003/0045082	03/06/2003	Eldridge, Jerome M., et al.	438	593	02/20/2002
	US-2003/0048666	03/13/2003	Eldridge, Jerome M., et al.	365	185.28	06/21/2002
	US-2004/0004245	01/08/2004	Forbes, Leonard , et al.	257	315	07/08/2002
	US-2004/0004247	01/08/2004	Forbes, Leonard , et al.	257	324	07/08/2002
	US-2004/0004859	01/08/2004	Forbes, Leonard , et al.	365	185.05	07/08/2002
	US-3,978,577	09/07/1976	Bhattacharyya, Arup , et al.	29	571	06/30/1975
	US-4,449,205	05/15/1984	Hoffman, Charles R.	365	182	02/19/1982
	US-4,495,219	01/22/1985	Kato, Takashi , et al.	427	82	10/08/1982
	US-4,717,943	01/05/1988	Wolf, Hans P., et al.	357	23.5	07/16/1986
	US-4,794,565	12/27/1988	Wu, Albert T., et al.	365	185	09/15/1986
	US-4,870,470	09/26/1989	Bass Jr., Roy S., et al.	357	23.5	10/16/1987
	US-5,445,984	08/29/1995	Gary, Hong , et al.	437	43	11/28/1994
	US-5,455,792	10/03/1995	Yi, Yong-Wan	365	185.12	09/09/1994
	US-5,510,278	04/23/1996	Bich-Yen, Nguyen , et al.	437	40	09/06/1994

EXAMINER

DATE CONSIDERED

Substitute Disclosure Statement Form (PTO-1449)

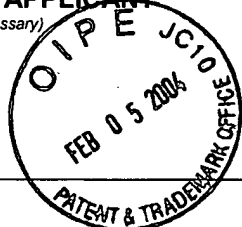
* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional) 2 Applicant is to place a check mark here if English language Translation is attached

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)



Complete if Known

Application Number	09/945,507
Filing Date	August 30, 2001
First Named Inventor	Forbes, Leonard
Group Art Unit	2824
Examiner Name	Dinh, Son

Sheet 2 of 3

Attorney Docket No: 1303.014US1

	US-5,617,351	04/01/1997	Bertin, Claude L., et al.	365	185.05	06/05/1995
	US-5,646,430	07/08/1997	Kaya, Cetin , et al.	257	322	08/28/1995
	US-5,691,209	11/25/1997	Liberkowski, J B.	437	7	10/15/1996
	US-5,739,544	04/14/1998	Yuki, K , et al.	257	25	12/12/1995
	US-6,077,745	06/20/2000	Burns, Jr., S. M., et al.	438	270	10/29/1997
	US-6,101,131	08/08/2000	Chang, Ming-Bing	365	185.33	04/22/1999
	US-6,127,227	10/03/2000	Lin, Chrong J., et al.	438	261	01/25/1999
	US-6,135,175	10/24/2000	Gaudreault, P. , et al.	144	4.1	10/19/1998
	US-6,169,306	01/02/2001	Gardner, Mark I., et al.	257	310	07/27/1998
	US-6,288,419	09/11/2001	Prall, Kirk D., et al.	257	213	07/09/1999
	US-6,306,708	10/23/2001	Peng, N	438	266	02/02/2000
	US-6,433,382	08/13/2002	Orlowski, M , et al.	257	315	04/06/1995

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Foreign Document No	Publication Date	Name of Patentee or Applicant of cited Document	Class	Subclass	T ²
--------------------	---------------------	------------------	---	-------	----------	----------------

OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		AARIK, JAAN , et al., "Anomalous effect of temperature on atomic layer deposition of titanium oxide", <u>Journal of Crystal Growth</u> , (2000),pp. 531-537	
		AFANAS, V. , et al., "Electron energy barriers between (100)Si and ultrathin stacks of SiO ₂ , Al ₂ O ₃ , and ZrO ₂ insulators", <u>Applied Physics Letters</u> , 78(20), (2001),pp. 3073-3075	
		BHATTACHARYYA, A. , "Physical & Electrical Characteristics of LPCVD Silicon Rich Nitride", <u>ECS Technical Digest</u> , J. Electrochem. Soc., 131(11), 691 RDP, New Orleans, (1984),469C	
		HAN, KWANGSEOK , "Characteristics of P-Channel Si Nano-Crystal Memory", <u>IEDM Technical Digest</u> , International Electron Devices Meeting, (December 10-13, 2000),309-312	
		INUMIYA, S , et al., "Conformable formation of high quality ultra-thin amorphous Ta ₂ O ₅ gate dielectrics utilizing water assisted deposition (WAD) for sub 50 nm damascene metal gate MOSFETs", <u>IEDM Technical Digest</u> , International Electron Devices Meeting, (December 10-13, 2000),649-652	
		MANCHANDA, L. , "Si-doped aluminates for high temperature metal-gate CMOS: Zr-Al-Si-O, a novel gate dielectric for low power applications", <u>IEDM Technical Digest</u> , International Electron Devices Meeting, (December 10-13, 2000),23-26	
		YAMAGUCHI, TAKESHI , "Band Diagram and Carrier Conduction Mechanism in ZrO ₂ /Zr-silicate/Si MIS Structure Fabricated by Pulsed-laser-ablation	

EXAMINER**DATE CONSIDERED**

Substitute Disclosure Statement Form (PTO-1449)

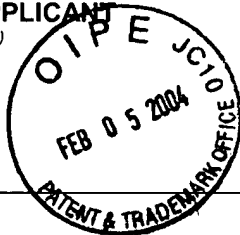
* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional) ² Applicant is to place a check mark here if English language Translation is attached

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)



Complete if Known

Application Number	09/945,507
Filing Date	August 30, 2001
First Named Inventor	Forbes, Leonard
Group Art Unit	2824
Examiner Name	Dinh, Son

Sheet 3 of 3

Attorney Docket No: 1303.014US1

OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	X	Deposition", <u>Electron Devices Meeting, 2000. IEDM Technical Digest.</u> International, (2000), 19-22	

— Missing item marked with X

EXAMINER**DATE CONSIDERED**

Substitute Disclosure Statement Form (PTO-1449)

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 809. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.¹ Applicant's unique citation designation number (optional) ² Applicant is to place a check mark here if English language Translation is attached

S/N 09/945507

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Leonard Forbes et al.

Examiner: Son Dinh

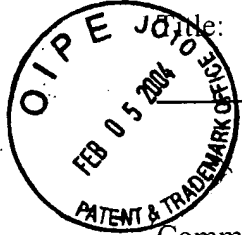
Serial No.: 09/945507

Group Art Unit: 2824

Filed: August 30, 2001

Docket: 1303.014US1

Title: FLASH MEMORY WITH LOW TUNNEL BARRIER INTERPOLY
INSULATORS



COMMUNICATION CONCERNING RELATED APPLICATION(S)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Applicants would like to bring to the Examiner's attention the following related application(s) in the above-identified patent application:

<u>Serial/Patent No.</u>	<u>Filing Date</u>	<u>Attorney Docket</u>	<u>Title</u>
09/945395	August 30, 2001	1303.019US1	DRAM CELLS WITH REPRESSED FLOATING GATE MEMORY, LOW TUNNEL BARRIER INTERPOLY INSULATORS
09/943134	August 30, 2001	1303.020US1	PROGRAMMABLE ARRAY LOGIC OR MEMORY DEVICES WITH ASYMMETRICAL TUNNEL BARRIERS
09/945512	August 30, 2001	1303.027US1	IN SERVICE PROGRAMMABLE LOGIC ARRAYS WITH LOW TUNNEL BARRIER INTERPOLY INSULATORS
09/945554	August 30, 2001	1303.028US1	SRAM CELLS WITH REPRESSED FLOATING GATE MEMORY, LOW TUNNEL BARRIER INTERPOLY INSULATORS
09/945500	August 30, 2001	1303.029US1	PROGRAMMABLE MEMORY ADDRESS AND DECODE CIRCUITS WITH LOW TUNNEL BARRIER INTERPOLY INSULATORS

COMMUNICATION CONCERNING RELATED APPLICATIONS

Serial Number: 09/945507

Filing Date: August 30, 2001

Title: FLASH MEMORY WITH LOW TUNNEL BARRIER INTERPOLY INSULATORS

Page 2

Dkt: 1303.014US1

10/075484	February 12, 2002	1303.043US1	ASYMMETRIC BAND-GAP ENGINEERED NONVOLATILE MEMORY DEVICE
10/081818	February 20, 2002	1303.045US1	ATOMIC LAYER DEPOSITION OF METAL OXIDE AND/OR LOW ASYMMETRICAL TUNNEL BARRIER INTERPOLY INSULATORS
10/177096	June 21, 2002	1303.063US1	GRADED COMPOSITION METAL OXIDE TUNNEL BARRIER INTERPOLY INSULATORS

Respectfully submitted,

LEONARD FORBES ET AL.

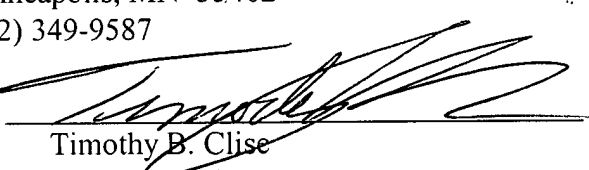
By Applicants' Representatives,

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.
P.O. Box 2938
Minneapolis, MN 55402
(612) 349-9587

Date

2 Feb '04

By


Timothy B. Clise
Reg. No. 40,957

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 2nd day of February, 2004.

Name

Amy Moriarty

Signature

